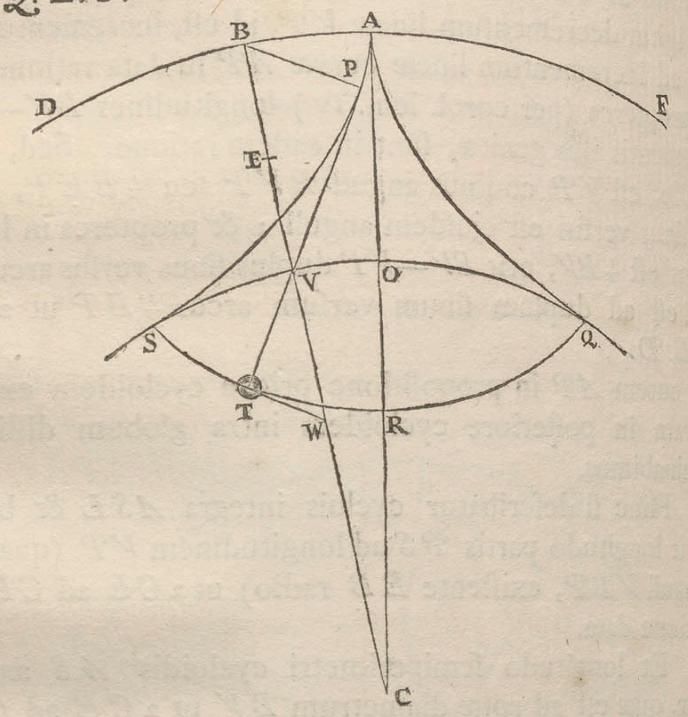
vallo CA deſcribatur globus exterior DAF, & intra hunc globum a rota, cujus diameter ſit AO, deſcribantur duæ ſemicycloides AQ, AS, quæ globum interiorem tangant in Q & S & globo exteriori occurrant in A. A puncto illo A, filo APT longitudinem AR æquante, pendeat corpus T, & ita intra ſemicycloides AQ, AS oſcilletur, ut quoties pendulum digreditur a perpendiculo AR, filum parte ſui ſuperiore AP applicetur ad ſemicycloidem illam APS verſus quam peragitur motus, & circum eam ceu obſtaculum flectatur, parteque reliqua PT cui ſemicyclois nondum objicitur, protendatur in lineam rectam; & pondus T oſcillabitur in cycloide data QRS. Q. E. F.



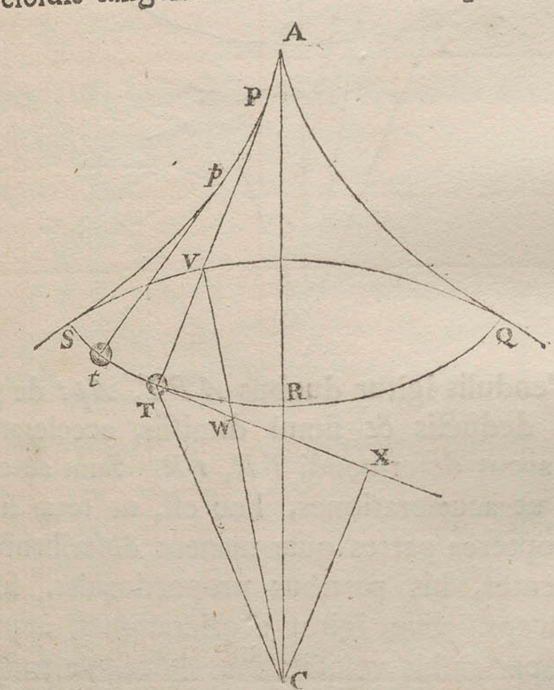
Occurrat enim filum PT tum cycloidi QRS in T, tum circulo QOS in V, agaturque CV; & ad fili partem rectam PT, e punctis extremis P ac T, erigantur perpendicula BP, TW, occurrentia rectæ CV in B & W. Patet, ex conſtructione & geneſi ſimilium figurarum AS, SR, perpendicula illa PB, TW abſcindere de CV longitudines VB, VW rotarum diametris OA, OR æquales. Eſt igitur TP ad VP (duplum ſinum anguli VBP exiſtente $\frac{1}{2}BV$ radio) ut BW ad BV, ſeu $AO+OR$ ad AO, id eſt (cum ſint CA ad CO, CO ad CR & diviſim AO ad OR proportionales) ut $CA+CO$ ad CA, vel, ſi biſecetur BV in E, ut $2CE$ ad CB. Proinde (per corol. 1. prop. XLIX.) longitudo partis rectæ fili PT æquatur ſemper cycloidis arcui PS, & filum totum APT æquatur ſemper cycloidis arcui dimidio APS, hoc eſt (per corol. 2. prop. XLIX.) longitudini AR. Et propterea viciſſim ſi filum manet ſemper æquale longitudini AR movebitur punctum T in cycloide data QRS. Q. E. D.

Corol. Filum AR æquatur ſemicycloidi AS, ideoque ad globi exterioris ſemidiametrum AC eandem habet rationem quam ſimilis illi ſemicyclois SR habet ad globi interioris ſemidiametrum CO.

PROPOSITIO LI. THEOREMA XVIII.

Si vis centripeta tendens undique ad globi centrum C *ſit in locis ſingulis ut diſtantia loci cujuſque a centro, & hac ſola vi agente corpus* T *oſcilletur (modo jam deſcripto) in perimetro cycloidis* QRS: *dico quod oſcillationum utcunque inæqualium æqualia erunt tempora.*

Nam in cycloidis tangentem TW infinite productam cadat per-



pendiculum CX & jungatur CT. Quoniam vis centripeta qua corpus